Special Issue on The H-Bomb

Debunking The New York Times Editorial on Stevenson and The Bomb, See Box Page 3

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A Vote for Adlai Is A Vote Against The H-Bomb

We urge our readers to vote and work for the election of Adlai Stevenson. We believe that in raising the H-bomb issue he has raised the most important issue in the world today. The quarrels of right and left, the rivalries of captalist and communist empires all dwindle into petty quarrels beside the common interest of humankind in the twin aspects of the H-bomb question. The first is to protect the air all living creatures breathe from the poisons released by H-bomb tests. The second is to save the earth itself from the thermonuclear war which the rising tensions of a thermonuclear arms race may render inescapable, once the intercontinental ballistic missile with the H-bomb warhead is achieved.

In making the H-bomb the prime issue of the campaign, in pledging himself to make the ending of tests the first order of business if elected, Adlai Stevenson has turned the election into a referendum on the H-bomb. He has given us a chance to vote on the No. 1 issue of our era. Should he be defeated now, after making the election a test of sentiment on this issue, his defeat will be regarded as a mandate of confidence in the military bureaucracy which has taken over control of the Atomic Energy Commission under Admiral Strauss. A clique of military men, with their civilian satellites and captive scientists, has been making life-and-death decisions in an atmosphere of super-secrecy and deceptively reassuring press releases. Stevenson's defeat would give them a blank check to proceed as they please.

Ten Nuclear Scientists Speak Out

"Our people must not be shielded from the grim realties. . . . They must realize in full the dangers of radioactive fallout. . . . We find it regrettable that discussions of our military strength, of our vulnerability and our foreign policy in relation to H-bombs have thus far represented such a small proportion of current political discussion. . . . We must realize that time is running out—that our actions and inactions during the next four years may well determine whether our people, our nation, our civilization live or die."

—Ten Nuclear Scientists (Including One Nobel Prize-Winner) at California Institute of Technology in support of Stevenson on H-Bomb Tests, Oct. 14.

The New and Terrible Poison They Tried to Keep A Secret

A new poison, described in the adjoining box, has been developed by the use and testing of atomic weapons. It is Strontium 90, or radioactive strontium. This is the most dangerous biologically of the radioactive substances which "fall out" from large thermonuclear explosions. But for an accident, the appearance of this new poison might still be a secret.

This is the disclosure which Atomic Energy Commissioner Thomas E. Murray made last November 17 in a Fordham Law School address. Mr. Murray said that before the hydrogen bomb was tested at Bikini on March 1, 1954, "The decision was made to issue only two statements—first an announcement that tests were to be held, and then a short guarded statement at their conclusion." An accident, which Mr. Murray attributed to Providence, upset these plans. Radioactive dust from the explosion settled on a Japanese fishing vessel, the *Lucky Dragon*, some 90 miles downwind. "The news about the potential hazard of radioactive fallout from the thermonuclear weapons burst out of secrecy," Mr. Murray recalled. "Twenty-seven Japanese fishermen announced to the world the first fateful news about the lurking catastrophe that may possibly lie in wait for all of us . . . the shock to world opinion rivalled in its own way the blast of the H-bomb itself."

Thus linked with the issue of the H-bomb is the issue of the American people's right to know. We have drifted a long way from a free society when a handful of officials can decide to withhold information of such magnitude. In that same speech, Commissioner Murray said, "It is true that a handful of men—in science, in the military, in government—do understand that we have in our hands a power of limitless destruction. But the fact that only a handful of men possess this understanding is itself a dangerous thing . . . an essential insur-

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Evil Offshoot of The Atomic Age

"This radioactive fallout as it is called, carries something that's called strontium-90, which is the most dreadful poison in the world. For only one tablespoon equally shared by all members of the human race could produce a dangerous level of radioactivity in the bones of every individual. In sufficient concentrations it can cause bone cancer and dangerously affect the reproductive processes."

—Stevenson at Chicago, Oct. 15.

"A sufficiently large number of such [thermonuclear] explosions would render the earth uninhabitable to man. . . . One of the products released by a nuclear explosion is a substance that is called radioactive strontium. . . . Prior to the atomic age there was no radioactive strontium in the atmosphere or the soil. . . . There is a limit to the amount of this strontium that the human body can absorb. . . . There is a limit to the number of large thermonuclear explosions that the human race can withstand. . . ."

—AEC Commissioner Thomas E. Murray, Nov. 17, 1955

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(*Continued from Page One*)

ance against the dangers inherent in nuclear weapons is an America-wide public and a world-wide public that fully realizes the cosmic dimensions of this danger." In using a presidential campaign to air this issue, Stevenson is making a major contribution to the restoration of democratic control over thermonuclear policies.

"Operation Sunshine" and All Is Well

From the first, the new danger has been played down by AEC Chairman Strauss and the majority of the Commission. The first statement issued by Admiral Strauss after his return from Bikini at the end of March, 1954, admitted the fallout but attributed the skin lesions of the Japanese fishermen to "the chemical activity of the converted material in the coral rather than to radioactivity." When radiostrontium's danger was finally admitted, it was underestimated. "Estimates have changed almost wildly," Mr. Murray told his Fordham audience. "A year ago the public was informed that the radiostrontium presently in the soil would have to increase a million times over before increased frequency of bone tumors from this source could be recognized. Recent statements have revised that figure drastically and significantly downward from one million to ten thousand."

When the AEC arranged for a special study of fallout hazards from bomb tests, it called the project "Operation Sunshine"; the name was unusually, if unconsciously, revealing. Sure enough, the conclusion (as disclosed in the AEC's 20th semi-annual report last August) "was that the long-term effects of fallout from high yield weapons was not as great as generally supposed." Indeed it was "insignificant." This was the section of the 20th semi-annual report which bore the footnote, "Commissioner Thomas E. Murray does not subscribe to this section of the report."

Highest Fall-Out Here In U. S.

". . . the U.S. probably has the highest total fallout in the world. . . ."

—Dr. Willard R. Libby, Atomic Energy Commissioner, in addressing the American Association for the Advancement of Science, Oct. 12.

In the absence of authoritative investigation with access to secret data, it is impossible from the outside to judge the AEC's conclusions. But it is interesting to piece together some significant bits from the reports made at the same time by British and Indian scientists. Let us begin with what seems to be the key assumption of the AEC study, that tests will continue at the present rate. "Thus it appears," says the conclusion of its section on the radiostrontium hazard, "that *at the present level of weapons' testing*, the present and potential contribution of strontium 90 to the world ecology is not a significant factor." (Italics added.)

But what if the rate of testing rises? The British report (*The Hazards to Man of Nuclear and Allied Radiations.* British Medical Research Council, June 1956, HMSO. Cmd. 9780) says in paragraph 231, "The most impressive feature of these figures for exposure from fallout is the very great effect of a very few thermonuclear explosions. This is not surprising since their power is measured in equivalents of millions of tons of TNT compared with the thousands of tons for atomic bombs. If the rate of firing this type of weapon increases, the radiation exposure will be altered proportionally."

Smythe Backs Stevenson

"Your clear and objective statement on the desirability of stopping large H-bomb tests by international agreement is a service to this country, transcending the partisanship of the current campaign."

—Henry de Wolfe Smythe, member of the AEC when the A-bomb was developed, author of the famous "Smythe Report."

The Danger Point May Be Close

Just how rapidly each test steps up the danger may be seen from a passage on page 121 of the study published by a group of Indian scientists in June (*Nuclear Explosions and Their Effect*, Publications Division, Government of India.) "The maximum burden of strontium 90 that an average person can carry for lifetime without any risk of its causing any untoward effects (e.g. malignant tumors) is, as we have seen earlier, 1 microcurie for occupational exposure and 0.1 microcurie for exposure of a whole population. It is this latter value of 0.1 microcurie which is relevant to global fallout. It is too close to the figure of 0.025 microcurie which, according to our foregoing calculation, is the burden everyone is expected to carry as a result of global fallout from one single nominal high-yield test explosion." If these figures are correct, it would not take many more big bomb tests to reach the threshold of danger.

We have no way of evaluating these reports, but it is interesting to notice in the *New York Times* last Monday (Oct. 15) a letter by a distinguished physicist, W. Selove, on the testing problem. He said that while students agree that the genetic effects of radioactive fallout as yet are slight "there is much less agreement with the optimism of the commission" on strontium. "From the numerical data published by the AEC itself," Dr. Selove wrote, "some independent observers have reached the conclusion that in certain areas of the world the strontium 90 hazard may have passed the danger point, to say nothing of the additional production of this material in further tests." If this is true, then the problem is urgent.

Confusing Somatic With Genetic

The Atomic Energy Committee and its supporters in the scientific world have fallen back on the National Academy of Sciences Report of last June. "Ten Fold Rise in Tests of H-Bomb Called Safe," said a typical page one headline in the New York *Herald-Tribune* last Monday, "National Academy

Official Figures Show The New Poison in Midwest Soil Went Up 75 percent in 9 Months

"At the end of 1955, the total deposition in the upper midwest of the U.S. was some 13 mc/mi2 of SR 90. In the spring of 1956, this total rose to about 16 mc/mi2. Between May 5 and mid-July of this year, Operation Redwing was conducted at the Eniwetok Proving Grounds in the Pacific. Particular attention was paid to the fallout problem in this Operation . . . the total deposition in the stratosphere during this Operation was held to a figure very considerably less than that present in the stratosphere before the Operation. . . . [But at the same time] the latitudinal tropospheric world-wide fallout, which is maximized by weapons of high yield which do not puncture the stratosphere, is increasing. . . . Such weapons have been air fired in the last month. This . . . descends rather rapidly but all the way around the world in the same general latitude as the firing site. Thus, though it is difficult to estimate, it appears that this amounts to perhaps 5 additional mc/mi2 of SR 90 and Cs137 in the U.S. Adding to this about ½ mc/mi 2 for the world wide tropospheric fallout from the Redwing Operation and 1 mc/mi2 for stratospheric fallout, we would estimate at present that a total of about 22 mc/mi2 of SR 90 is to be found in the soils of the midwestern U.S."

—Dr. Willard F. Libby, AEC Commissioner to the American Association for the Advancement of Science, Oct. 12.

So in nine months radioactive strontium in the soil of the Midwest rose almost 75 percent.

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of Sciences Report Is Cited in Controversy." The same report is also cited in the *New York Times* editorial of last Tuesday, seeking to rebut Stevenson on the H-bomb (see box below). But this has tended to confuse two subjects. One is the *somatic* or bodily effect of strontium 90 on living persons, the other is the *genetic* effect on future generations of the additional x-rays with which the gonads or sex cells are being dosed by H-bomb tests. The former is the menace which is of most immediate concern. The *Washington Post*, in an editorial last Tuesday praising Stevenson for opening up the subject, says soberly, "Whether nuclear tests already have poisoned the atmosphere with radiostrontium to a dangerous degree is a question to which there is no positive answer." There ought to be an answer before more tests are made.

The Only Safe Assumption

Even the genetic danger may not be as slight as the headlines would make it appear to be. AEC Commissioner Murray told the Humphrey disarmament subcommittee last April 12 that while we now know much more than a few years ago about "contamination of atmosphere and soil by radioactive strontium", our knowledge "about the genetic effects of radiation is even more incomplete." How incomplete it is was illuminated at the special session on "The Uses and Effects of Atomic Radiation" just held on Oct. 12 in Washington by the American Association for the Advancement of Science. Unfortunately the papers paid most attention to the "reassuring" speech by AEC Commissioner Libby and little to the warnings of other scientists, indeed the *New York Times* covered only the Libby speech.

One of the dissenting speeches is excerpted in the box below. Another, by Dr. L. D. Dunn, professor of zoology at Columbia, warned that recent tests on mice—instead of fruit flies—showed that humans may be far more susceptible to the bad genetic effects of radioactive fallout than had hitherto been presumed. Dr. Dunn analyzed some of the implicit but dubious assumptions in current analysis of the genetic problem, particularly the assumption "that radiation induced mutations are like those which occur spontaneously." Dr. Dunn said "there is evidence that a large category of mutations induced by ionizing radiations represent losses of function, less reparable on the whole than those arising spontaneously." Dr. Dunn said that for the short run, before more is known, "the safest assumption at present is that the best level of *controllable* radiation is none at all."

The Bombs Are Big Enough Already

". . . It is my belief that the big thermonuclear weapons which we now have are big enough for any conceivable military purpose. They are also so big that their use in large numbers would raise both medical and moral problems chiefly by reason of the resultant world-wide contamination by radioactive substances. It is my consequent conviction that, as a matter of policy, we should not endeavor to develop weapons larger than those we now have. . . . We should discontinue the testing of multi-megaton weapons; such tests are no longer necessary. . . . To go on making bigger and bigger bombs simply and only because we have the scientific and technological ability to make bigger and better bombs . . . would be to make science and technology the master, rather than the servant, of national military policies."

—Atomic Energy Commissioner Thomas E. Murray.

A Manipulated Symbol, Not A Leader

Adlai Stevenson is right when he poses the problem of further H-bomb tests as a problem of leadership. Already, by opening up the subject to national debate, he has encouraged dozens of scientists to speak up, who had hitherto sunk into a hopeless silence. On the other hand, those who have watched Mr. Eisenhower here for four years, know that he has neither the taste, the patience nor the capacity for the kind of hard study this problem requires. With all due respect to Mr. Eisenhower, and with all consideration for his personal good-will, the fact is that he is a manipulated symbol, not a leader, an optical illusion of American politics behind which others make the decisions. He likes his comfort. His tendency is to parcel out as many problems as possible to his staff. His tendency is to drift, and to make no decisions of his own until they become unavoidable. But drift in this situation may be fatal. Mr. Eisenhower's effort to shut off discussion would abdicate not only his power but the electorate's to Admiral Strauss and the military bureaucracy. They are determined to depend on nuclear warfare and to continue nuclear testing. We see in Mr. Stevenson's election some hope of checking them and of giving this country the kind of positive leadership which measures up to the H-bomb era.

Two Authoritative Answers to the Complacency of the New York Times on Tests

"According to the best available evidence (a report of the National Academy of Sciences) the tests could be continued at the present rate over the next thirty years without even approaching our average exposure to medical X-radiation."

—New York Times editorial, Mr. Stevenson and The Bomb, Oct. 17.

"The present weapons-testing programs present a double threat: first the threat of genetic damage from fallout and from radioactive vapor, and second, the threat that continued testing may progress to actual warfare. Many people accept the weapons-testing program on the basis that it overbalances the potential harm by strengthening our military position and thus helping to insure peace. In assessing the potential harm, however, statements are always qualified by a phrase such as 'if the testing of weapons continues at the present rate. . . .' This qualification is usually obsolete by the time the statement is printed. THIS WAS THE CASE EVEN FOR THE NATIONAL ACADEMY OF SCIENCES REPORT. (Emphasis added). It is a mistake to think that we can set our own pace of nuclear-weapons testing. There is a snowballing effect of any such program. Our tests cause other nations to increase their pace, which in turn increases ours. It becomes a self-accelerating system; a chain reaction of chain reaction, so to speak. Only the international control of weapons testing can stop such acceleration."

—Dr. Laurence H. Snyder, president elect of the American Association for the Advancement of Science, addressing its special meeting on "The Uses and Effects of Atomic Radiation," Washington, Oct. 12, a speech not reported next day in the New York Times.

"It is shocking to realize [from the reports by the National Academy of Sciences and the British Medical Council on radiation dangers] that already virtually half of the maximum reasonable allowance of exposure for the whole population is preempted by medical and dental diagnostic and therapeutic uses of ionizing radiation. We must henceforth guard jealously every expenditure of this radiation allowance. The cost of negligence would be genetic bankruptcy, and from that bankruptcy there might be no recovery, for nation or for mankind."

—From a review of the British and American reports in the October issue of the Bulletin of the Atomic Scientists, by Dr. H. Bentley Glass, professor of biology at Johns Hopkins, a member of the Committee on Genetic Effects of Atomic Radiation appointed by the National Academy of Sciences to write the report quoted in the New York Times editorial.

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A Point-By-Point Rebuttal Most Newspapers Buried or Ignored

How Admiral Strauss Misleads The Public on Civilian Atomic Power, Too

On October 10, Chairman Strauss of the AEC made a speech to the New York Board of Trade. His purpose was to answer Stevenson's charge that the U.S. was lagging behind Britain and the U.S.S.R. in the development of civilian atomic power. The Strauss speech pictured the U.S. as ahead. The speech brought a rejoinder next day from Senator Albert Gore (D., Tenn.), a member of the Joint Congressional Committee on Atomic Energy. Most newspapers buried or ignored Gore's answer.

Admiral Strauss pointed with pride to the fact that the U.S. has built 82 reactors. Gore said Strauss neglected to mention that 68 of these were low temperature reactors not suited for power, and that the remainder were all of experimental or research types, not full scale plants. Gore called this "the same 'numbers' game played last spring before the Joint Committee by a representative of the private power companies" who then gave the number of reactors built as 89, seven more than Strauss. This witness was challenged to name any plant already built *or building*, which could generate as much as 5,000 kilowatts. The only one he could name was the Shippingport, Pa., reactor, built with government funds, and under government technical direction.

Verbal Legerdemain

In his speech Strauss said, "In terms of strictly *civilian* [his italics] power, our program includes 30 reactors in operation in the U.S., under construction or planned, for experimental or for actual full-scale use." Gore replied, "To say that 30 reactors are 'in operation . . . under construction or planned . . .' is like saying that one has a thousand dollars in the bank, expected or hoped for." Gore challenged Strauss to name any reactor under construction able to produce more than 5,000 kilowatts, other than the Shippingport plant. The prepared text of the Strauss speech said that 18 of these 30 plants would provide commercial power. But as delivered this was changed to 15. Strauss said three other proposals were still being studied.

Strauss asserted six of these 15 plants would be built without government subsidy. Gore said that though a member of the joint committee, which is supposed to be kept informed, he did not know what Strauss was talking about. Gore said "presumably" Strauss was referring to a proposal by a Pennsylvania power and light group which "will not be in a position to decide until 1958 whether they will proceed with plans"; a proposal by three Florida companies "who have not even decided what type of reactor they would be interested in considering" and a group of utilities in North Carolina and Virginia which was not incorporated until October 4 of this year "and has announced it will have a meeting sometime this month to consider making a proposal."

Reversing The True Facts

Gore said "perhaps the most remarkable passage" in the Strauss address came when the AEC Chairman declared President Eisenhower broke ground for the Shippingport, Pa., plant "within a week after the new Atomic Energy Law was enacted . . . under the kind of partnership between Government and Industry which had long been proposed, but not implemented."

The Shippingport reactor, Gore pointed out, was authorized and financed under the Atomic Energy Act of 1946. "The fact is," Gore declared, "that the Atomic Energy Act of 1954 . . . far from promoting such projects, actually prohibits the initiation of another such project by the Government in the absence of specific authorization by the Congress—authorization which Admiral Strauss not only has declined to seek but which he has bitterly resisted. This feature of the 1954 law was one for which the Admiral fought hardest." The purpose was to block expansion of public power.

Gore contrasted the record here with the 60,000 kw reactor which begins operation this month in Britain at Calder Hall. He also said that AEC records and Joint Committee records show the Russians plan to construct power reactors with a capacity of between 2 million and 2,400,000 kw by 1960.

"In a recent public statement," Gore concluded, "Admiral Strauss said that persons in public life have a responsibility not to mislead the American people. In this position I wholeheartedly concur."

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